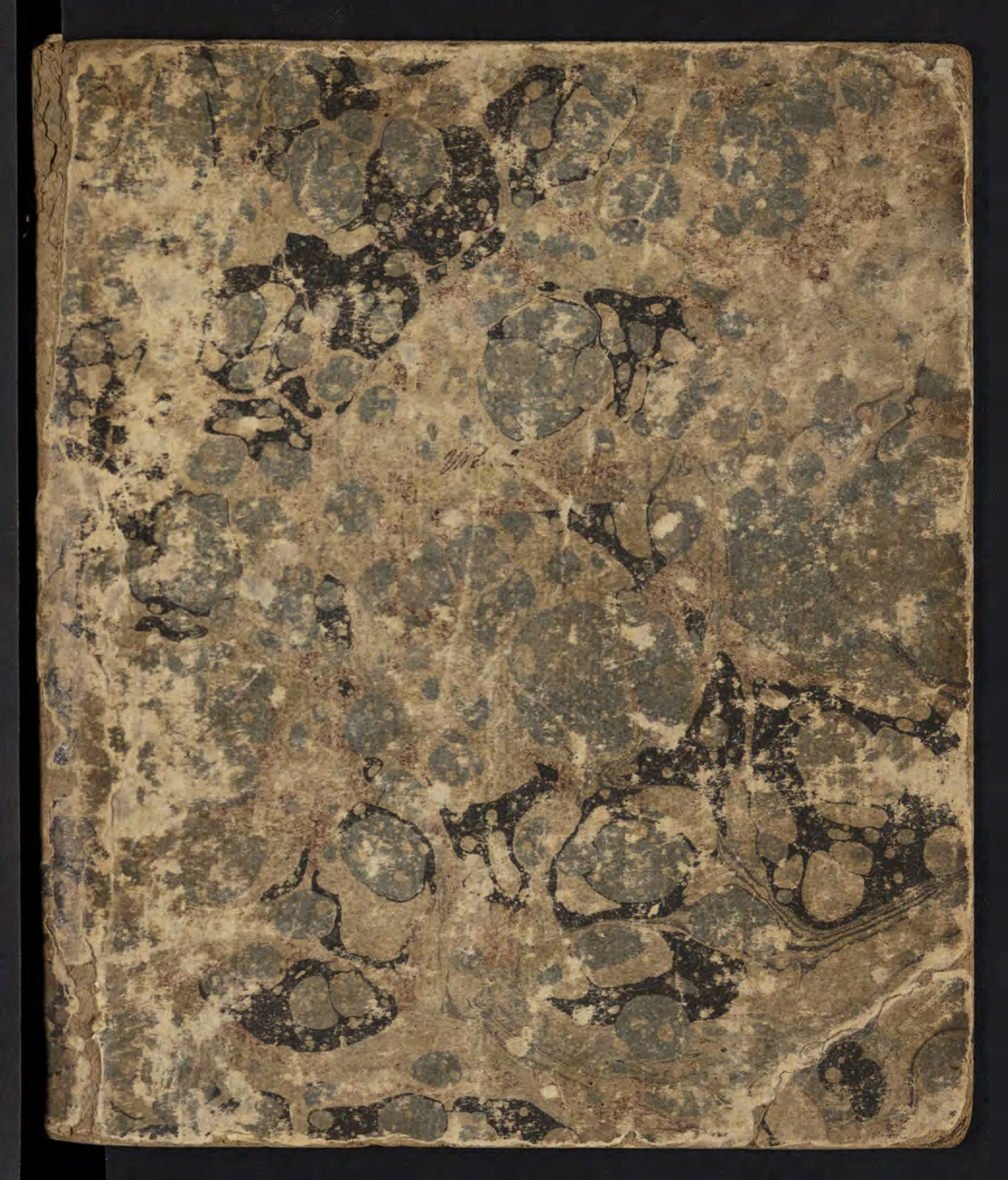

Notes from Dr Rushes Lectures

Vol: 2

Taken in 1797: 1798:

Elijah Griffiths

There are few diseases contracted from the mothers milk by the child, provided the lips of the child & nipples of the mother are sound. I permitted a child to suck its mother, who had the yellow fever, without infecting the child with the disease. Children most commonly receive the contagion from the breath of the mother.

Of Excretions. In the excretions, I include the feces, urine & bile to which some add the sweat. In the two former there is nothing of much importance, for they are the residuum of the aliment & drinks taken in, with some changes in their appearances & qualities by undergoing the animal process; such as odor, saline taste and color.

Bile is considered by most physiologists as a secretion performed by the action of that large gland the liver; but I prefer calling it an excretion. It may be said to be an excretion in as much as the bile is thrown into its receptaculum, the gall bladder, and from thence into the intestines where it mixes with the other juices, and is in part ~~one~~ with the feces.

Perhaps the principal use of the bile, is to excite the peristaltic motions of the intestines, and promote the septic tendancy of the feces and

also serves to give a further solution to the alimentary matter. That it is the consequence of a septic process I infer from its bitterness.

In contemplating the pancreatic juice we are at a loss to point out its use, may it not be to mix with the bile & render it less acrid. - The characteristics of bile, are a very bitter taste, a greenish yellow color, and froths by agitation like the solution of soap; Its constituent principles are oil, water & soda. The bitterness of the bile is its septic quality; The yellow color is owing to a mixture with acids in the first passages; Its assuming the appearance of soap, depends on an alkalescent base combined with oil.

When the bile lies long in the first passages, as in some chronic diseases, it changes its color to a black. This appearance is the atrabilis of the ancients; but this is only occasioned by its stagnation.

It imparts different colors to the skin, occasioned by its absorption, & transmission to the skin by the capillary vessels.

The passions of the mind have a powerfule influence in promoting the excretion of the bile. I knew an instance of a man who in a fit of anger, vomited half a pint of bile. - Ideas which excite nausia & vomiting often produce a discharge of bile. —

Perspiration is the next excretion in order. How do we know that we perspire or throw a noxious matter from the body? By washing an arm clean and putting it in a vessel, we will see the gas acumulate on the side of the vessel, and sometimes fall in drops.

What is its nature? water, salt, & mephitic air. The two first principles are generally perceived; the last may be known by putting a lighted candle under the bed-clothes in the morning and it will be immediately extinguished; also the odor that is emitted from the body proves the presence of this air.

It is said that a dog can distinguish his master among 10.000 people by his odor. It is also said that a Dutchman can distinguish an Englishman by his smell.

The glutenous matter that appears on the skin after perspiration, is supposed by some, to be oil, but this is not the fact, for it does not in a chemical process exibit this substance; it is nothing but a crustatious matter formed on the skin by the action of the air.

The use of perspiration is not only to throw off the noxious matter; but serves to lubricate or keep the skin moist & facilitate the functions of the body

Perhaps the perspiration serves another important purpose, in the warm season, by the evaporation that takes place, viz. to keep the body cool:

What quantity of perspiration in atter is discharged? I answer more than all the other excretions. The quantity is different in different persons and in the same person; there is generally discharged about 3 3oz in 24 hours.

This discharge depends on the force of stimuli, and the debility of the system. Perspiration is not the cause of cold as is immagined; but is the effect of glandular action; hence sometimes the accumulation of perspiration & increase of fever or arterial action.

Of Nutrition

There are two opinions respecting the manner in which nutrition is performed. The first is that the nerves supply the system with nutriment this is the Cullonian opinion. The second is, that nutrition is performed by the heart and arteries, Haller supports this hypothesis with much life. His opinions were formed from observations on the incubated egg, till the bird was ~~completely~~ completely formed: I embrace the latter opinion & observe that the heart & arteries are first formed & then a particle of blood, this particle acts on the heart & arteries giving them motion; these act on the brain & nervous system, & this

nervous system reacts on the heart an arteries, and through them conveys nourishment to the different parts of the body. ~~from a~~ That this is the manner of nutrition, I infer from a number of arguements, & conclude by saying that the bones of patients who have used madder, become tinged with this substance; which proves that nutriment is performed by the heart & arteries.

Dr. Darwin admits that nutriment is conveyed by the blood to the different parts of the system, and the nutriment selected by the glands, each of which drinks in their appropriated fluid; this process is called glandular appetency. Thus nutrition appears to be performed in a manner similar to secretion. In the embryo he says the absorbent system takes up the liquor amnii & converts it into nutriment.

There may be another reason assigned against nerves affording nourishment to the body. viz. the largeness of the brain, or nerves that different animals possess, not being in proportion to the size of the body.

An ox is 5 times as large as a man, but has not so many nerves, and not the one fourth part the brain that a man has, yet he grows faster & appears to be as wele nourished.

This view extends the importance of the heart and arteries, which has, in some measure since

the days of Cullen been little attended too

If my life has ever been usefule to my fellow mortals, or advantageous to myself in the study of the science of animal nature; it has been by a timely investigation of the sanguiferous system

Of the peculiarities of the male & female body & mind.

These peculiarities are eithe general or local. The general are 1.st The size of the body. Women are commonly less in size than men.

2.ly The bones of the two Sexes differ in size. The bones of the male are largest & strongest; hence it is a rule in anatomy where there are large bones there must have been large muscles. This fits the male to endure the laborious employments in life, & which constitutes the masculine character. 3.ly There is a greater power of contractility observed in female than male arteries, & consequintly greater irritability; hence they are more easily acted upon by the nervous stimuli, and more susceptible of impression. 4.ly nervous sensibility is greater in the female than the male and hence they are more susceptible of pleasure & pain from a less stimulus, & will use greater efforts to obtain the one & avoid the other, tho' their exertions are not so long continued to obtain them

and are of course more subject to despair.

2.ly Local peculiarities. These are,

1.st The pelvis. The pelvis of the female is larger and more circular than the male. 2.ly of the uterus. The uterus and its appendages together with the menstrua belong to the female exclusively. The breasts of the female differ from the male, being larger, and we may add as a third difference, the peculiar softness of the female skin, when compared with the male.

The female mind differs from the male. This we might reasonably expect to be the case, from the differ-ence in the body; for there appears to be an analogy between the mind & body.

1.st The female understanding is less comprehen-sive & vigorous than the male; hence they are more apt to use premature judgement, and more liable to be deceived.

2.ly Immagination is not so extensive in the female as in the male; few women are able to depict anima-ginary scene in lively colors.

3.ly The female memory is less than the male. females have a greater memory for words, than for thing & ideas. But, 4.ly The females have a much more refined taste than males. They posess more acuteness & activety, but are less humane and

circumspect; hence they will keep no secrets but their own.

5.ly As females possess greater sensibility than males, their passions such as hope, fear, pride, joy, love & hatred are more violent. hence they have an implacable hatred for their enemies, which time only can obliterate.

6.ly Females have a greater sense of the moral faculty, than males; perhaps this may be owin in part to their retired situation in life, unexposed to the bustle of the world; altho they possess the moral faculty in a greater degree than the male, yet they have less consciousness, & are more apt to dissemble.

Of the operations of the mind.

Females have quicker perceptions, greater fondness for society, are more open & communicative & more modest; this last I suppose to depend upon an instinct of nature, & not on the power of education.

Of Menstruation, generation, conception & parturition

Another peculiarity belongs to the female, that is the catamenia, or monthly discharge of blood from the uterus. This phenomena in the female appears at different period of life in different countries. In warm climates they appear sooner in life than in cold. However they generally make their appearance about the 14 year, but in 2 instances I have

heard of they appeared in the 7 year, I knew a case at 10 years of age. At this time the breasts begin to swell & the venerial appetite increases, and a general change appears to take in the female System. The catamenia in the human female continues to flow every month (unless accidental causes prevent, such as obstruction, pregnancy &c.) until the age of 40 or 49 years at which time they generally cease. I knew an instance of the return of the menses at the 72 year of age, in a Mrs St. clair of this place. She appeared to renew her age, became vigorous & healthy & performed the actions of life as well as in youth. May not the longevity of the antidiluvians in the Mosaic history be owing to this cause. The menses cease to flow sooner in laboring women than than others, who are not accustomed to much exercise, hence they commence sooner in the industrious than the slothfull. The quantity discharg'd is different in different women, and in the same woman it varies at different periods; its continu=ance is generally 3 or 4 days; there are instances where this regular discharge does not take place which is supplyed by hemorrhagies from other parts, such as the nose, anus, navel, stomack, Lungs &c. when the quantity discharged becomes great it weakens

the system, and produces foulness of the part, by the mosaic ordinances termed uncleanness.

Altho' the catamenia cease during preg=nancy, yet there have been several instances in which the regular period of discharge continued; I suppose in these cases that the discharge proceeded from the vagina, & not from the vess=els of the uterus. The causes of the periodical discharge of the catamenia, assigned by different authors are different. Doctor Brown says it is occasioned by the stimulus of venereal appetite. But this is false, for we find that it takes place where the desire is wanting, as wele as when it is satisfyd.

Others suppose it to be caused by a fermentation of the blood in the uterus, the blood is supposed to collect, ferment, & produce a stimulus to the uterus, which excites a discharge.

Plethora is more generally received as the exciting cause of this discharge, Dr Cullen adopted this opinion, & has had many followers.

I embrace this opinion & add that the female constitution favors the opinion, as being more predisposd to inflamatory diseases; The feverish symptoms accom=panying the discharge, such as pains in different parts of the body, increasd heat &c. All demonstrate

plethora as the cause: I suppose the hæmor-
-rhagia uterina to be simelar to the hæmopti
=sis, or discharge of blood from the lungs; but the
uterine discharge is from the arteries (does not hæ
=moptisis, frequently proceed from the arteries, as
well as the veins)? Dr. Darwin supposes it to be
a paralysis of venous absorption, which is owing
to the want of the stimulus of amatorial copu
-lation, or the growing fœtus.

Another cause of the menstrual discharge,
is said to be owing to lunar influence; Dr. Darwin main
=tains this opinion with great firmness. I deny the
influence of the moon on menstruation; & believe its
cause to depend on certain associations in the system ei
-ther actions or ideas, pehaps simelal to the return of the
tertian fever.

What purpose does it anser in the system? It
has been supposed to afford nutrition to the fœtus; but
the general is that the embryo is nourished from the
liquor amnii. It is supposed to facilitate pregnan
=cy; but instances have occured where pregnancy has
taken place in obstructed menses.

On all controverted points I feel a diffidence;
but lest silence should be construed into cowardice,
I will risk an opinion, & say that it prompts to the
venerial appetite by stimulus of distention in the

uterine vessels, hence conception is said to be more certain about the time of the menstrual discharge; And women giving suck to children rarely become pregnant till after one or two discharges have taken place; at this time the venerial appetite is said to be increased & conception more certain.

Pregnancy has taken place in some rare instances previous to the catamenia; but this must be considered rather as a departure from nature.

The use of menstruation, appears to be, to excite a fullness and greater sensibility in the female system, & thus far answers the purpose of propa=ting the human species.

Of the male organs of generation.

For a description of these, "See anatomy".

There is a very visible change takes place in the male about the age of puberty, this change is supposed to be in consequence of the secretion of se=men. The nose becomes enlarg'd, beard protrudes, voice undergoes a remarkable change, from the soft and feminine to the hoarse & manly sound; Eruptions appear in the face about this time. This variety of appearance is a consequence of the stimulus of the secreted semen.

This stimulus is similar to the distention of stomach or uterus, from aliment or the fetus: but it is such a stimulus between the sexes that

it ever keeps the system in action & promotes desire between them.

It is remarked of animals, of the femal or male kind, that when the ovaria or testicle is extracted this stimulus ceases, and they become fat, such as hogs oxen &c. & acquire more strength. (may not this be resolv'd into one of Dr. Rush's principles. viz. that the abstraction of one stimulus causes those that remain to act with greater force; hence the stimulus of procreation being abstracted, the stimulus of appetite is increased.)

We have now brought the sexes to that period in which they are prepared to propagate their species; this period takes place about the 14th year in females, & 18th or 20th in males, and continues till the venerial appetite declines.

Marriage appears to be a wise institution of nature to prevent the abuse of the venerial appetite, for as there is no particular seasons, in which mankind abstain from embraces, as there are in the brute creation, he would soon destroy himself by the excess of desire & embrac, and would extirpate his species from the earth; hence this physical reason against polygamy ought to be sufficient to prevent mankind from the unlawful exercise of this passion, were there no other.

Spallanzani tels us so great was this desire in the male frog, that he suffered his legs to be amputated without leaving the female.

This desire between the sexes is congenial with their nature, and there is no man, who has not at one period or another felt the venerial impulse, eunuchs excepted, who are not strictly speaking men. This appetite is not contrary to true religi=on, it was inculcated in the apostolic age "whoever wele, let him marry" Tho' some religions prohibit their priests, under severe penalties this natural desire. Our Saviour admits it ~~and~~ in a lawful manner, & no doubt, he knew the desires of human nature. I before observed there was no period in manhood which did not prompt to the venerial appetite; It is a happiness to the human race that this appetite is too deeply seated for either time or pain to eradicate it. If it was not naturally interwoven with our system, from the care & anxiety attending the rearing an offspring, poor people would never marry. To prevent the male from using unnatural embraces, woman was formed his companion & partner in care, as an outlet of this natural stimulus.

The degree of pleasure arising from the social in=tercourse, is different in the human & brute species. Some animals appear to enjoy it in a higher degree than man. The turtle & the toad remain long with their female, & others wile yield their life before they wile quit their embrace. —— +

Causes of generation

I enter on this subject with reluctance, for clouds & mists hang over our head, & involve it in obscurity. There have been many ingenious hypothesis respecting the production of animals. Some suppose the numerous progeny to have existed in miniature in the first animal, & that their minute forms were evolved, or distended as the embryo encreas'd in the uterus.

Mr Buffon has with much ingenuity immagined the existance of certain organic particles, which are suppos'd to be partly alive, & partly mechanic springs. These mechanic springs are by Hedham supposed to excite the former (or living particles of animalculæ which he supposes to be secreted both from the male & female, & exists in the spermatic fluids of both sexes) into perpetual action in the uterus.

Dr Darwin supports a theory somewhat different. He supposes the embryo to be secreted from the male by the peculiar action of a gland. This embryo he supposes to consist of a living filament with a susceptibility of receiving irritation, ~~& also with some acquired habits peculiar to the parent~~ sensation, volition & association, also with some habits peculiar to the parent. This living filament is received

into the uterus, as a nidus where it is excited into action by certain stimuli; such as the fluids secreted by the mother, or liquor amnii; & from thence increases by the nourishment supplied by the mother.

I differ from the foregoing opinions & suppose that the male semen (as it possesses acridity as proven before) acts as a stimulus on the female ovum and thence induces life. This is more agreeable to the phenomena of animal life, treated of formerly, and which is kept up by the power of certain Stimuli.

This theory involves a question, How is the male semen brought in contact with the ovum? The common opinion is that the semen masculinum is conveyed to the ovaria by the fimbriæ of the falopian tubes, & there becomes impregnated. I object to this opinion, because there have been instances of conception where the fimbriæ remained closed after coition, so that they could not convey the semen to the ovaria. The celebrated Spallanzani relates an experiment, in which he took 3 grains of the male semen of a toad, and impregnated a pint of water, after which he dropt a single drop of this mixture on the female, from which she became impregnated.

There are many instances to be found on record, where women have become pregnant without the embrace of the male; & in some of whom the hymen was entire till delivery.

I have heard of a celebrated accouchour in England, who had seen an instance of the unruptured hymen, in a woman that he was call'd to deliver.

Aristotle (Tough stories) relates a case of a young woman, who watched a young man when bathing himself in the warm bath; with whom she was much enamoured; after he had left it, she bathed herself, & her uterus absorbed the seed which the young man had previously ejected.

I shall pursue the idea of stimulus and suppose the semen of the male to act as a specific stimulus on the ovaria, and conception is the consequence. That the semen is such a stimulus, I infer from the actions of other stimuli, tho' producing very different effects such as poisons mercury &c which act specifically on the system.

But S. Hunter supposes another theory, viz. that there is a motion in the uterus & fimbriæ, resembling the peristaltic motions of the intestines but is retroverted by the motion, induced by the stimulus of coition. May we not suppose the semen to be absorbed by the vagina, uterus & fimbriæ?

Thus gentlemen I have delivered you two opinions on this mysterious process of nature; you must choose & judge for yourselves. However I think the former the best, or at least the most probable.

Women are more apt to become pregnant after the menstrual period, than at any other time; sickness, a foreign visit, absence of their husbands for some time, all accumulate the excitability of their systems to the stimulus of the semen, which can then act with greater energy on the female ovaria. A due attention to this subject, with other observations on the female economy would in time wipe off that odium, of which the fair sex despair; viz. barrenness

The symptoms of pregnancy, such as nausia, vomiting, pains in the head, back &c. which generally take place immediately after conception, and continue during gestation, are similar to the symptoms which takes place from the effects of contagion. I knew many instances of the yellow fever in this city, which were induced with a pain in a tooth &c.—

These symptoms in conception are the effects of the new stimulus on the system; But there are two symptoms to be added to those; the first is an instance of a woman, who during every time of pregnancy was troubled with a coldness of the feet & legs, which was periodical every day, and subsided after delivery. The second is of a woman, who in her pregnant state, could scarcely forbear from stealing every thing that fell in her way. You need not be surprised at this gentlemen, the same

symptoms are discovered in many diseases.

Pregnancy may then be emphatically stiled a diseased State, in which the excitement becomes increased from the stimulus of the distening embryo.

There are some instances in which the breeding symptoms (as they are termed) are not known, but perfect health from the time of conception, till parturition, is always observed.

This is said by some tobe impossible, ~~that a~~ there can be no conception without some of the symptoms already mentioned. This may be a wrong conclusion, for I knew a woman in this place (in whose veracity I can confide) that informd me she had born Several children, without any of the symptoms of gestation.

The whole business of conception is performed in the ovaria, it is there the embryo receives its first filaments, the expantion and elongation of vessels, brain, nerves & muscular fibres.

The semen is a substance formed from the fluids, solids mind, may form all parts of the system. It is no wonder that the child should resemble the parent. The doctrine of miracles, free-agency & trinity are not gratter mysteries in divinity than the doctrine of animal life, mind & generation in Physiology; But dies doceat, the time wile come when it will be as easy to unravel them, as the most simple process in chemistry; To you gentlemen I

commit it, where I hope the subject will receive improvement.

Of the nourishment of the fœtus.

Dr Darwin has received the old opinion of the fœtus being nourished by the liquor amnii, & the oxigenation of the blood from the placenta; This opinion must remain till future discoveries furnish us with a better (vide Darwin).

Of Parturition

After the fœtus is formed in all its parts and prepared to enter on a new scene of action, it produces by its bulk & motion, irritations on the mother, which terminate in sensation and pain; whether there is any natural instinct in the child, to put itself in a proper position for delivery, more than what gravity produces I pretend not to determine; but from some irregular presentations of the child which happen, I am inclin'd to believe there is no instinctive quality.

The Throes of women in labour is occasioned by the head of the child bearing on the parts of the pelvis. And this pain of Child-bearing was entailed on the fair-sex in consequence of the curse pronounced on Eve. Pain & Childbearing are not naturally connected together, for there are instances of delivery without pain; It is then the business of the Physician to mitigate the natural evils

of life, & make them in some measure tolerable.

The remedies used to mitigate the pains of parturition are opium & blood-letting.

Perhaps they are only useful by producing debility; for there is in the pregnant state a predispo=sition to an inflamatory diathesis. Blood letting acts directly in debilitating, as we shall see when we come to treat of the cure of the inflamatory state of fever. Opium debilitates by inducing indirect debility. It is remarked that debilitated women suffer less in parturition, than the more stout & healthy.

In all births direct or indirect debility is induc=ed in the system; this being the effect of nature may we not then immitate her & dispose her for a little more easy parturition? would not the loss of 2 lbs of blood before delivery make it more easy & destroy the the pain altogether. This with me, is no new opinion, for I confess I have long adopted it, before I knew the principle. Dr Dewees of this city informed me that he used venesection with success in ale tedious & painful labours. I have no doubt but the period is not far distant, when the pains of parturition will be as easily & certainly relieved as a fit of the gout. —

Of the different stages of life

We have already seen man in the state of puberty rising by insensible gradations, flush'd with youthful vivacity & pleasure, to the state of maturity. From this state we behold him on the stage of action,

plunged into the busy trials of life in rearing a tender progeny for a future age; The red cheek bounding with blood, the strong mind & vigorous body, belong to the state of manhood or middle life.

From this period we may drop a tear and try to veil in night the decay, & at length the final ruin of animal life; here pleasure fails, & pensive grief takes its seat, shrinks at the awful change.

Unable to contemplate the sight, let us bid adieu to this last unpleasant subject, as also to former more pleasant one, & turn our attention to the diseased state of animal life called Pathology.

Pathology

Chap. 1 Introduction.

I have hitherto viewed the body, as divine as the mind of man in paradise before his fall, where vigor & pleasure, love & benevolence ware the high characteristics of innocence. We must with them descend to view man in his fallen o diseas'd state, both of mind & body, & leave the treatment of the moral faculty to the Spiritual physician.

Pain & evil are in the world, we see their effects daily. Whence the origin of this evil would be a query worthy the solution of the ~~mathematic~~ metaphysician,

and has been attempted by some. The history of their effects, which first appeared on the earth with the fall of man, are recorded in sacred writ. Pain in child-birth, murder, war, pestilence, famine, lying, hypocrisy, deceit, deluge of water, ~~confusion~~ confusion of tongues & opinions, every scene of wickedness, together with the shortness of life &c. are all the effects of evil.

That life is a forced state, agrees with the principles of religion as well as Physiology.

Moral virtues are kept up by the power of stimuli contrasted by opposite vices.

In prosecuting this subject I am left almost without a guide to conduct me throug the pathless wilderness. Gavius, & other writers on this subject, afford me no assistance but would rather retard my progress; so that I am like a vessel on a boisterous ocean, without a compass or chart. By Pathology I mean that science which treats of the Seats, signs, & causes of diseases: Thus the action of cold on the body is the remote cause, the debility induced by the cold is the predisposing cause, the heat of the sun or a stove room, the exciting, & the convulsion in the arterial system the proximate cause of what constitutes inflamatory disease.

If there is no topical affection, the seat of the disease is in the arterial system. The causes have been enumerated, the symptoms or signs, are pains in a part or different parts.

I shall pursue the order of our syllabus & begin with disease & the origin of ~~natu~~ moral and natural evil. Before entering on the cause of Disease, I shall premise a few propositions, which will in some measure open the way for a further investigation of truth.

1st All diseases depend on predisposing debility. Debility is twofold direct & indirect: for example let the healthy point be represented by number 50: the abstraction of any stimulus which will diminish the action of the system below the healthy point induces direct debility. Indirect debility is brought on by the excess of stimuli; tho' the excitement may be previously several degrees above or below the healthy point.

However opposite the causes, which induce direct or indirect debility, may be, they are scarcely to be distinguished from each other, but by a knowledge of the causes which induce them.

2.y Debility is always followed by an increased excitability. This increase of excitability is by Dr Brown confin'd only to a state of direct debility; but it takes

place in all cases of indirect debility where sudden ly induced in the system. Direct & indirect debility are on a footing, when they are of a chronic nature. They both waste the excitabi=lity of the system, & leave it in that state in which stimuli act with too little force.

The more sudden the diminution of the excitement, the more sudden is the increase of the excitability of the system: hence excitement & excitability are in different proportions in different stages of life, which proves the origin of evil in the world. This is no hypothesis, for in medicine as well as politics there are no half truths. Evils are of two kinds, physical & moral, both these are the effects of debility.

It is necessary here to observe that neither Direct nor indirect debility is a disease; but a predisposing cause, hence the system can seldom remain long in a state of debility without disease being induced. There appears in this case to be a translation of the excitabi tity into excitement.

When the excitability is destroyed death is the consequence, or the system is disorganised.

In this disorganisation nothing more happens to the system, than to a bell by splitting, or than

the breaking the strings of a harpsichord.

Vitality is as absurd in animal life, as vibratility in a bell, or musical instruments each fail in performing the necessary functions thro' disorganisation of parts.

Physical evils are then, the debility which affect the globe, or rather the consequence of disorganisation. They are not evils in themselves, but being applied in excess they become such to us, particularly. Here evil depends on three things

1.ly

2.ly an error loci. 3.ly a solution of continuity of parts.

Debility is then the cause of disease & produces an error loci. Contagion is not a direct evil but a misplaced Stimulus, dependant on an error loci; It is produced from vegetable & animal matters which in a moderate degree are salubrious & nourishing to the system. Shall we consider the bread we eat as a direct evil because it happens to be misplaced in the act of deglution, & produces serious consequences? Surely not. But are not contagions real & positive evils?

* It has been emphatically called, Magnum donum dei — The great gift of god

No they are not; they are owing to an error loci, & produce disease by excess; a small portion of it is highly cordial to the system, & would be worth preserving. The effects of contagion, have been con=sidered as much more alarming, than the effects of opium, but they are not. Opium has produced the most sudden & serious consequences, when wrong applied. Shall we then consider it as a direct evil; because it has sometimes done more harm than contagion? No it is one of the most valuable remedies in nature when not mispla=ced. * Is pain a positive evil? No, it is only a mis=placed, or excess of pleasure; hence then all phy=sical evils are the effects of error loci. Moral evil consists in the derangement of the mind: when order was the universal law of nature, the mind was the pillar that supported the magnificent fa-bric, but an error loci has deranged it. The will is misplaced & of course every other faculty of the mind. Love was principally centered on the creator of the universe; but now it is misplaced & confined to a single object. every vice in the world is a mis placed virtue. There is no new principle created, but a misapplication of the primevial virtues, or an error loci has taken the place of order in nature. The relish

of good ~~has~~ is heightened by the contrast of evil; moral evil was originally negative: but, its effects on man are not so, they are positive evils; I was led to this opinion in contemplating the cause of disease; It gives me pleasure to find that I am not alone in this opinion. Mr. Edwards of N. England is of the same. Hence, predisposing debility is the cause of all evils both of the body & mind. we shall return to the

Cause of disease. These are remote, predisposing, exciting or occasional & proximate.

I of the remote cause of disease.

Debility we have said is the cause of disease, but this of itself, could never produce a disease, it is therefore followed by an increas'd excitability, & this by irregular action. So that disease consists ~~of~~ in irregular action. This irregular action arises from a defect, or increase of excitement; yet the excitement may be increas'd without producing a disease. Thus in running, or dancing, the excitement is increas'd; But this differs from the diseased state, as it is only an accelerated ~~accelerated~~ of the blood through the heart & arteries, & differs from the convulsive action in disease.

Disease is always partial; for there is no general

disease that ever takes place in the system. Fever is confind to the sanguiferous system; Mania to the brain &c. This irregular action in the system is similar to the electric fluid, consisting in plus & minus. Some parts of the system are charged with disease, while other parts are minus or are not charged. This irregular action discovers itself by convulsions in the system, as tetanus &c.

I have formerly said, & published that there is but one fever, I will go further & say that there is but one disease, and that consisting in irregular convulsive action, whether it ~~con~~ exists in the blood-vessels or nerves, & that the different appearances are but symptoms of disease, & not the disease itself.

Disease is a unit, the proximate cause is but one also, & that is, irregular action. Thus water collected in the brain of Hydrocephalic persons, is not the proximate cause of the disease; but the effect of irregular action in the arterial system.

I have been called a Brunonian in medicine, with as much propriety I might be called a Mahometan in religion: for my principles in Physic are as different in the one, as they are foreign in religion from the other

Dr. Brown supposes disease to consist in debility. I do not admit that debility is a disease it

only invites to disease. Dr. Browns medicines are calculated to remove debility; mine to remove morbid action. I do not exclude debility from physical notice, far from it; many patients die of mere weakness. Dr. Brown supposes excitability & excitement to be equal in disease. I say the reverse is the case, and that disease consists in unequal & divided excitement & excitability; while health consists in the equality & uniformity of them both.

From attending these lectures gentlemen you will loose much more than you will gain. You will loose that immense burden of hard names contained in nosological writers, and substitute in their place observation & judgment which will make the path plain & easy to you.

When we consider disease as simple or one, we will be naturally led to consider the remote causes of disease as one, & that stimulus.

Cold alternating with heat, marsh & human miasmata, contagion & poisons of all kinds, intemperance, passions of the mind, bruises, burns &c all act by stimulating the system in producing disease. This idea is of extensive application in medicine inasmuch as it severs the sinews & division of disease from their remote causes, & makes their proximate cause the same. Viz: irregular action.

Dry & warm Summers are healthy, but succeeded by sickly autumns

The sensible qualities of the air, are heat with moisture, & without, cold with & without humidity. Sudden changes

Stimuli must be considered relatively as it respects the animal. I suppose ~~I suppose~~ the animal system to be the medium between excess and defect of Stimulus, in either extreme disease is the consequence; hence the division of stimuli into the powerfull & less powerfull as relative to the animal body. A medium between these extremes of stimuli, may be termed the healthy degree of stimulus.

A proper distinction between disease & disorder is necessary to be observed, otherwise we will blend the two together, & take the one for the other when they are essentially different.

Disease is irregular action in the system; disorder is the effect of that irregular action. Thus the water in the brain in Hydrocephalus is a disorder, because it is the effect of irregular action. Before we enumerate the remote causes, which are said to produce or predispose to disease, we shall only observe, that they act indirectly or directly on the System. Those of the first class hurt by excess of action, the latter by deficiency.

1st The remote causes are the sensible & insensible qualies of the air. This comprehends the action of heat & cold. for some of the effects of these qualities vide vol. 4 ~~th~~ of my inquiries & observations:

There are 6 forms of morbid excitement viz

Convulsions in the muscles

Spasms in the Bowels, Clonic & Chronic

Heat or burning in the Skin

Itching in the anus & pudendum

aura arthritica or Shocks in the head & breast

Suffocated excitement in the bloodvessels

Previous to entering on the remote causes I shall say something of predisposition. It is that state of the system which permits stimuli to act on it, & is often the effect of a remote cause; thus a child is often predispos'd to disease before it comes into the world by the irregularities of its mother, and by its indolent situation. The pressure it receives from parturition, the stimulent washes, such as brandy, rum &c or even soap and the bandages, the effect of air upon its tender skin, all dispose it to disease. The diet has a particular effect on the infant, in disposing it to diseas. Thus I knew a violent colick brought on a child, which produced death, by the spirits which a nurse had taken. The crouded schools, the severity of masters, the derision of children, all predispose to disease. But to return:

The effect of air on the system is great. By its vicissitudes it often becomes the remote cause of disease. By its combination & mixture with other floating particles, it becomes noxious, & by an under proportion of oxigene, it frequently becomes the remote cause of disease. Hence Sydenham said it destroyed more lives than the plague.

That is the universal stimulus of nature.

Pains never exist without disease,
but disease may exist without pain,
Pain is lancolating in the muscles
Shooting in the teeth. —
Gnawing in the bones. —
accute & Sharp in membranes
dull & obtuse in paronchymatous parts
Twisting in the bowels

The animal, vegitable & mineral kingdoms are evidences of its effects, a certain degree of heat constitutes health in man, whilst a larger proportion induces languor & sloth. Heat stimulates the arterial System from a state of languor, to a state of healthy action, & if continued to excess, it again induces languor or debility. It has the same effect on the nervous & muscular systems; on the alimentary canal it produces an agreeable action if moderate, if carried to excess sickness is the consequence; acting to a certain degree on the cuticle, perspiration is produced, an excess causes dryness. It produces small boils on the skin. It changes the skin from a white to a ~~brown~~ brown color; & it increases the venerial appetite; why it does so, is not easily explained; but more of this afterward; hence it is that there are more children born in middle latitudes in winter than summer.

Heat disposes the blood to putrefaction; hence it is that much bile is secreted in warm weather (vide page on the bile, where the Dr. considers the bile in some measure formed in the vessels before it was received in the gland)

Heat affects the mind producing dullness. It has been said that hot climates were unfavorable to men of genius. Heat affects the will, hence some say that Slavery should be retained in hot climates & that those should be governed who had no wills of their own.

Heat is less unfriendly to old, than young or

middle aged persons; The Romans & Portuguese used to remove from their own country, to a warmer one when they were old, & enjoy a longer life.

A previous exposure to cold, makes the body more susceptable of heat; but if this exposure be continued for six or eight months, the circumstance is reversed: hence Europeans bear the heat of the west Indias better than the natives.

A green Christmas is said to make fat churchyards; for the sudden vicissitudes from heat to cold always predisposes to disease. The warm weather that succeeds the cold in the spring predisposes to diseases; hence pleurisies abound most at that season.

Warm Summers are generally healthy, but, are generally succeeded by bilious fevers in the fall season, so that disease is generated at one time & brought forth at another.

There is no climate necessarily unhealthy. In the warm countries such as Guinea &c. the inhabitants enjoy good health, while the European factors die under the same climate.

If mankind would use their reason & experience these baneful effects might be prevented.

The effects of heat are varied by moisture; hence the disagreeable atmosphere of a warm stove-room, is prevented, by placing a bason of water on the stove to produce evaporation. The fair complexion of the Irish perhaps, depends on the great evaporation which takes place on that Island. —

Of the effects of Cold.

Cold acts negatively. It can act only on the system by the proportion of heat it abstracts and therefore acts as a sedative, we call that state of the atmosphere cold, which has a less degree of heat than our bodies & therefore diminishes the excitement. That state of the atmosphere which acts sedatively on our bodies, might act as a stimulus in colder blooded animals; so that it only acts by its abstracting quality. Thus if 95 or 100° of heat be applied to the body it produces indirect debility, now if we apply 20° of cold it abstracts 20° from the 95 or 100° & so restores the system to the healthy point. In the same manner bloodletting raises a depressed pulse.

Cold sometimes produces excessive pain, as is felt by those who ~~[illegible]~~ to the tops of mountains to take celestial observations. Cold dulls sensation; hence the plea for the lash & slavery, in cold countries; it also lessens the venereal appetite; hence the inhabitants of cold countries are not so prolific as those of milder latitudes. It also produces hardness in the skin by the destruction of the cutaneous vessels.

6

Cold acts most powerfully when some of the other Stimuli are withdrawn. Thus when the Stomach is empty, cold acts with greater force. It excites the urinary discharge by retaining the perspirable matter. It acts more powerfully on old than young people & particularly inebriates. Five noted drunkards died in one night of a cold season in this city. Cold, by predisposing the system, after warm weather, will sometimes produce a bilious fever.

A check of perspiration by cold does not so often produce a fever or cough, as the sudden application of it to a part of the system. I once knew a gentleman who could at any time produce a cough by exposing one of his naked limbs to the action of the air. More than half the disorders of the human body are received by the mouth & feet ~~XXX~~. The mouth is the inlet of intemperance & the feet of cold.

One of many proofs that might be given, of cold acting as a sedative, is that it always lessens the action of the arterial system. In cold climates the pulse is always slower than in warm. A greenlanders pulse seldom beats more than 40 times in a minute. Diseases in cold climates are generally in one season, & appear

in another like those of warmer climates. These diseases sometimes quickly run into the gangrenous state of fever. Cold is most injurious when combined with moisture alternated with heat; hence middle latitudes are the most healthy. The effect of cold may in general be prevented by the warmth of a room & clothing. a person who says he will harden himself to cold, is like the farmers horse, which when he had just learnt him to live without eating, died.

Predisposition to fever may be prevented by the warm bath & clothing; but take care that the fever be not formed, for if it is you will do harm. The cold hand of a physician will sometimes produce rigors in a patient.

Wind, combined with cold, by blowing off the caloric, proves more disadvantageous than cold itself. To conclude, warm bed & wearing apparel have prevented disease 9 times, where they have produced it once; whereas thin clothing, cold rooms & exposure have produced 9 out of 10 of the diseases that happen.

We come now to speak of the insensible qualities of the air, or the different impregnations, it receives from being combined or mixed with foreign matters, constituting the term 2dly.

Contagion.

Most miasmata & human effluvia, are known by the name of contagion; but to render this matter offensive to the system, it must be combined with heat & moisture, and sometimes a degree of cold is required to render it effective in producing diseas. The degree of heat to produce the ill effects of miasmata is about 75° of Farenheit. This degree is sufficient to produce a considerable exhalation from the putrid ferment of decaying vegetable & animal substances. There are many facts that prove, that the exhalation of water only, is inoffensive to animal life; as in Cayan where there is almost a perpetual exhalation of water; yet the inhabitants are vigorous & healthy.

Summers that are very wet or very dry are generally healthy: but if this dryness is liquefied by a little rain, or the waters that were spread over the land partially exhale, fevers of the bilious type are prevalent: hence it is a moderate degree of moisture that is favorable to bilious diseases

Stagnant waters which are covered with a green pelicle, prevent exhalation, & produce no baneful consequence, but as soon as this green pelicle is broken by a shower of rain, a productive exhalation takes place, & disease follows, as effect does its cause. Matters, which are exhaled, partake of the vegetable & animal nature, & which in their recent

state are inoffensive; yet from the putrefactive process, & combination with the air, they acquire malignity & act as powerfull stimuli on the animal system.

The reason why this miasma, or putrefactive gas does not always produce disease, where we have evidence of its application is, there being no predisposition in the system to invite its action

To what distance this miasmata extends in the atmosphere so as to effect, is not easy to determine; We hear of people being affected at 3 miles distance from millponds, however its extent depends much on its quantity & the state of the air.

Of the putrefaction of different vegetable matters ~~that~~ produce disease.

1st vegetable & animal matters collected in creeks & ponds become putrid, & emit exhalations, which induce intermittent & remittent fevers, which exhibit more or less of the bilious type. 2ly Cabbage; The origin of the yellow fever was once traced to this source in this city. 3ly Putrid potatoes. 4ly Putrid pepper. 5ly Putrid Coffee; A melancholy instance of this last producing yellow fever in Philadelphia: A vessel

went from this port, with a few bags of coffee in her hold undiscovered, & returned from her destined port Hamburgh, in which voyage the coffee became mixed with the bilge water, on returning to this port & open=ing the hold, the crew all sickened with the yellow fever. 6.ly Putrid Indian meal produced the yellow fever in the West indias. 7.ly Putrid Cotton, had the same effect in the same place. 8.ly Putrid canvass, laid up wet in a sail loft gave origin to the yellow fever in this city. 9.ly Putrid straw, 10.ly. Rotten wood of an old house. 11.ly Green wood fermenting in a cellar. An instance of this nature happened in this city: wood being cheap in the summer a gentleman purchased & put it into his cellar; the consequence was that his family all had a fever. 12.ly Water in a cellar will produce fever. 13.ly Dr. Lind says the wood of a new ship ~~is~~ is unfavourable to the health of the sailors. 14.ly Putrid wines of a low kind will produce fever,

an instance of this occured in this place.

15.ly The ocean itself produces disease, Dr Clark takes notice of this. Perhaps this unhealthy quality of the ocean, is occasioned by the abundance of vegetable & animal substances with which it abounds.

16.ly A Rotten book, & paper money have produced a fever. The Smell of bilge water in a ship has had a similar effect on the human body.

Of putrefactive animal substances producing disease

1.st Dead bodies unburied after battles, have produced diseases of the most malignant kind, as may be learnt from writers on the Plague & pestilence.

2.dly Locusts are said to have produced disease in some countries from their death & having lain in heaps on the earth. 3.ly Putrid hides, & 4.th Putrid fish

It is necessary gentlemen, for you to know these sources of disease; as they will in some measure influence your practice.

These putrefactive matters have been divided into marsh miasma, or vegetable putrefaction, & human effluvia, or animal putrefaction; but I shall call them the miasmata of decaying bodies. A question will then arise

1st What is their nature? Some have supposed them to be organic particles; but I suppose them to be inorganized bodies, only capable of acting by the conjunction of heat, moisture, & a certain degree of cold on debility, or predisposition of the system to disease. That this is true is evinced, because that all do not acquire the contagion, who come within the contagious distance, yet at another period are susceptable of the contagion.

On what part of the body do they act? I answer 1st on the arterial system, producing convulsive action in the arteries, known by the different sensations the artery gives to the touch, & which you have had an account of in the lecture on the pulse.

2dly on the nervous system by producing head ach, vomiting, coldness of the extremities &c.

3dly On the Stomach & alimentary canal & on all the secretions; but principally on the bile; hence bilious vomiting in consequence of the abundant secretion of bile. large obstructed liver, diarrhoea &c

The bile is sometimes so highly vitiated as to excoriate the rectum, & the feces emit an odor so fetid as sometimes to occasion nausia vomiting & even syncope

Sometimes the bile mixes with the blood in its vessels & tinges the skin of a yellow hue, as is observed in remitting bilious fevers.

Do these contagious materials ever produce the dysen=tery? Yes, the yellow fever & dysentery frequently alter=nate with each other. Dr Sydenham observes this in his febris introversa.

All fevers produced by vegetable & animal exhalations are more or less contagious, & that they truly are so has been admitted in all coun=tries, in every age, by every writer in every ~~coll~~ College of Physicians, the College of Physicians of Philadelphia excepted.

Miasmata are said to act on the blood so as to produce a septic tendancy. Dr Sydenham ~~of~~ was of this opinion. It rather acts on the animal fibre, & in proportion to his muscu=lar ~~motion~~ action is the appearance of the blood.

This contagion is much more certain, when combined with moisture & the animal revolution; hence by exposure in the morning or evening it acts with more force, because the habit was pre=viously debilitated & almost always produces the intermittent state of fever. This is a necessary

observation to guard against exposure to the cool evening air.

Of the combination of animal putrefaction

1st want of cleanliness is a fruitfull source of disease; this evinced in camps, jails &c where there is not due attention paid to cleanliness.

2dly Confinement. Crowded Theatres, Jails, prison ships &c. produce fevers of a malignant nature; hence the Jail fever so often mentioned by authors, as arising from crowded wards &c.

3dly Low vapid diet of a vegetable kind.

4 Putrid animal substances used in diet & the offensive stench of faces

5dly Mixing with strangers. 6dly Grief or the passions of the mind are productive of fever.

all these remote causes of disease are often combined in wars, prison ships &c —

It is remarked that Soldiers, who sleep in tents are more apt to acquire the contagion, than those who sleep in the open air; perhaps the air carries off the animal exhalation from the body as fast as it is formed; while those who sleep in tents being deprived of the air, are more liable to disease because of the accumulation of the noxious exhalation

From these facts it appears that the human body infects itself with contagion, & that its own effluvia may be the cause of its own death.

Some circumstances relative to the acting of miasmata are 1st Cool air is favourable to the spreading of contagion: but cold destroys it; hence the contagion generated in July & August is inoffensive, till the last of September & October. Cold alternating with heat, produces fevers, hence fevers are rare in very cold or very hot weather.

2d Miasmata adheres to clothing of every kind. Instances are to be found, where it has lain dormant for 3 months, untill some circumstances gave it life, as heat, moisture &c.

Human miasmata are more contagious, than vegetable; hence Jail fevers are more contagious & infect more certainly, than the contagion from the yellow fever. Patients in fever aught not to be covered with too many Cloths in a warm room; but the bed ought to be drawn from the wall, light covering so as to keep the body moderately warm, a passing current of air, curtains suspended, or taken away, linnen frequently changed, not much company: All this circumstances if not attended to highten the force of contagion.

Whitewash'd walls do not retain contagion like wooden, & ought to be prefered if possible.

Ground floors also do not retain contagion, like wooden; hence the poor inhabitants of smoky huts with ground floors scarcely know what contagious diseases are

3.ly That contagion acts upon the predisposition, or debility I infer from the following cases. Parturient women are not so often affected with contagion as those who are not pregnant. Hunger & fatness, often induce fever from the want of the stimulus of distention.

4.ly Contagion acts with greater violence & certainty, when the foregoing circumstances are combined with the debilitating passions of grief, fear &c. In addition to the preceding sources of disease, from human miasmata, we may mention that some animals produce contagion; such as sheep, dogs &c. Sheep we know emit a fœtid effluvia; hence they frequently destroy eachother by this putrid exhalation, according to the old proverb, that one rotten sheep infects the whole flock.

Dogs do not produce contagion by any matter that exhales from their body; but by the bite; hence the hydrophobia is produced by that species of animals.

It is necessary to observe that the diseases induced by miasmata, are chiefly fevers. What then are the diseases produced by human miasmata & how are they known from those of another source? I answer that the first disorder produced by human miasmata, is the typhus mitior, or low nervous fevers of most authors. Huxham, Lind, Hillary &c.

I have seen in this fever buboes, & often high inflamatory symptoms come on from the accession of new stimuli, about the 11. 14 & 20 days.

It is known by all those circumstances which induce indirect debility, a weak & frequent pulse, disposition to sleep, torpor of the alimentary canal, tremors of the hands, dry tongue, & in some cases diarrhea.

The second grade of fever is the Plague. It is produced by the same causes that produce the jail or typhus fever. It is called the malignant state of fever, & constitutes the highest grade of inflamatory diathesis

It attacks frequently without a chilly fit, by a comatose, depressed, or intermitting pulse. These symptoms are the effect of a powerful stimulus prostrating the arterial system, & producing defect of action from excess of force, in some instances it induces general convulsions, tetanus & palsey, & sometimes destroys life in a few hours by apoplexy, or syncope.

Cool air & humidity heightens the symptoms of this fever, as well as the yellow fever.

The plague differs from the jail fever by its grade only, being more violent, more sudden, & more general in its contagion. It has been remarked that the plague has not been known in Europe for the last half century, whereas, formerly it regularly made its appearance twice a year.

These states of fever are distinguished from those of the marsh miasmata, by the following circumstances.
1st That they appear in every season of the year.
2d Having but one state of action.

Those states of fever that are brought on by marsh miasmata, appear in the autumn, & they have 2 states of action & an appearance of bile

Another source of disease we have yet mentioned; It arises from the changes in the constituent principles of the atmosphere impregnated with some noxious matters.

Phlogisticated air, has in some instances produced immediate death. In the black hole in calcutta where a number of people were shut down, they all were almost entirely destroyed by Plogiston. It is probable it produces those diseases which alternate by fits, as epilepsy &c. Charcoal burnt in a close room is often destructive to life by depriving the air of its oxigene, & giving out carbonic acid gas; hence a difficulty of breathing, suffocation, low pulse & languor are the consequences of respiring impure air.

Air is also vitiated by burning ~~[illegible]~~ fossile coal by the sulpher it contains. Dr Ramsey of south carolina observes, that dysentery & some other disorders are the effects of burning coal in charleston.

The effluvia discharged from certain manufactories, such as lead, mercury, &c. produce disorder in the system, such as colicapictonum, palsey, epilipsy &c. Matters ~~[illegible]~~ discharged from vegitables at night have produced disorders.

The oxigenous quality of the air is favourable to the production of the inflamatory state of fever, and is often the source of epidemics.

If it should be asked why Contagion did not exist in this country for centuries past? I answer that it was owing to

Towns & cities are the great seats of mortality; owing to filth, commerce with each other, & foreigners, confined air &c. The first cities we read of, is in sacred history built by Cain, in order no doubt to stifle the sting of conscience by society.

The disorders of cities are chiefly fevers, & those produced by human miasmata, such as the jail & nervous fevers. There are, comparatively few dysentaries in cities, to those of the country, produced by marsh miasmata. It is difficult to tell how far contagion may extend its influence, or be conveyed by the air, some say 40 miles. I think I knew an instance, where it was conveyed 10 miles on the river schuylkill. Mill ponds are a fruitfull source of fevers of the intermitting type. It is observed that intermittents were not known in many places in america, till the erection of mill ponds. The yellow fever is also produced by the putrid fermentation of vegetables in those ponds; hence to destroy the noxious exhalations, trees should be planted on the sides of the ponds. In confirmation of the above observation it is certain the inhabitants in the vicinity of a pond erected in the wood, enjoy good health.

The temperature of the air in America has suffered a considerable change since it was first settled by the Europeans. It is annually

becoming more unhealthy from the opening of lands on the atlantic coast; It is probable, like Germany it will become more uniform when the extensive range of woods in the western country is subdued, & an equilibrium is produced. The Germans experienced the good effects of the Hungarians & Hollanders opening their swarte countries.

People who migrate to another place, or country, are apt to become sick before they have "a seasoning" as it is call'd, from the change of air. Those who live in a sickly part & remove to a Town, do oftentimes excite the contagion into action which before lay dormant, by the new stimuli of company, noise, novelty &c.-

Old people leaving marshy lands, on which they had resided many years, & removing to more healthy places, frequently sicken from the abstraction of the ~~noxious~~ stimuli of the noxious exhalation.

There are two phenomena in the air, that I am unable to say any thing of. That thunder & lightning. Perhaps they may cause disease by their changing the air suddenly: as they do on fermentation. But I know of only one instance in which they produced disorder in the system, a Lady of this city always has the headach when it thunders, which goes off as soon as the thunder ceases.

The aurora borealis produces no disease that I know of. Tremors in the air, such as cannons in battle &c cause deafness, epilepsy & the like.

The influence of the moon in producing

Diseases has been acknowledged in all ages, but more particularly in marking the crisis of diseases. 1st It is perceptable in fevers. 2dly in epilepsies 3dly in warms. Children are annoyed with worms at the changes of the moon, hence they are sometimes called lunatics

5thly Hypochondriasis is influenced by the moon.

6thly Hemoptysis or hemorrhagy from the lungs occurs more frequent ~~for~~ at the change of the moon.

7thly Births are hastened by the change of the moon.

8thly Fainting & epilepsy sometimes happens about the change of the moon, Lord Bacon always fainted during an eclipse of the moon

Of Specific Contagion

They are called specific because they affect some parts of the body, more certainly & more uniformly than miasmata. The disorders which arise from specific contagion are,

1st Small-pox. The prevailing symptoms when taken in the natural way are, pains in the back more acute than in other fevers, pain in the pit of the stomach, so as sometimes to favor the opinion of an inflamation of the part. The small-pox does not always appear at one certain period after receiving the contagion. Sometimes 14 days & in a few instances

not before the 21 day, but, they most generally make their appearance about 9 days inoculation; however these limitation of disease to particular times are only found in books, for nature knows no limitation, either in the introduction or termination of disease.

2.ly Measles. In this disorder the contagion acts chiefly on the skin & lungs. It has been said to be uniformly one disorder, but I observed in 1789 two states of this disease, one of a gentle, the other of a highly malignant nature. They are much more fatal than the small-pox. 3.ly Scarlatina anginosa, or putrid sore throat is occasioned by the ~~[illegible]~~ contagion mixing with the mucus of the throat & fauces, producing ulcers & fever from the violence of the action.

4.ly Influenza. It affects the lungs. It has been said not to be contagious, but to depend on the sensible qualities of the air, such as heat & cold, dryness & moisture; but is not the case; because it affects at all seasons of the year, & every temperature of the atmosphere. It is the most universal contagion of any known in the world.

5.ly Chicken-pox. This is a mild contagious disease, chiefly infecting children, wile scarcely admit any medicine, & is rarely fatal.

6.ly Miliary fever. This is said to be contagious; but it is not. because it never infects any but lying-in women, owing to their particular situation.

Yly Hooping cough & a species of catarrh is generally admitted to be contagious; the first chiefly affects infants; the latter, people advanced in life. Perhaps it is from the peculiar circumstances of these periods of life, that these affections appear & not from specific contagion. These disorders are all more or less attended with an inflamatory diathesis. The Scarlatina cynanche trachealis was formerly so mild a disease, that it never required bloodletting; but, now I never think of curing it without this evacuation. All these diseases assume at times more malignance & therefore require variation of treatment. I remember when I first bled in the cynanche trachealis in this city. It was told to a Physician that I had bled a patient in the disorder mentioned, he lifted up his eyes & hands to heaven in surprise, & said my God, is it possible; so powerfull is custom, that we are unable to leave an old error, for a new truth.

Disorders affect the system in succession to each other. Dr Hunter relates this fact in his treatise on the venereal disease. The small-pox follows the measles & these last are succeeded by some other disease. The contagion of the small-pox & measles have been applyed to the body at the same time; yet one only made its appearance & that the most powerfull, which after having run its course was succeeded by the weaker.

So that there appear to be a species of monarchy even in diseases & one only predominates over the rest. Keep these facts in view in all reigning epidemics But I cannot yet dismiss the history of the reign of epidemics; they will admit of no rival. The small-pox, measles, yellow fever, scarlatina, influenza, hydrophobia; & in short every species of disease yeild to the most powerful contagion, which when it has reigned, resigns its seat to the ~~most powerful~~ next in power &c.

This observation will be found profitable, it is what I have always taught in my public lectures, & published in my 2d vol Inquiries.

This law of epidemics is nothing more than what is observed in the different stimuli: who has ever two pains of equal force at the same time. this corresponds with the laws of animal life viz that we are susceptible of impressions, either of sensation, or ideas, only in succession. —

Of aliment, Drinks & producing disease

The different kinds of diet &c were treated of in Physiology under the head of aliment, we shall not here enumerate them; but briefly hint at the production of disease through their use. They only hurt the system by their quantity & quality.

1st They act by distention in producing disease. The stomach too much distended by the quantity of food produces apoplexy & Exercise is always ~~dangerous~~ immediately after a full meal, as it impairs digestion hence the origin of drinking wine, spirituous liquors, smoking & after ~~eating~~ too much, in order to promote digestion. It would be much better to eat less than be forced to have recourse to to such vile practices.

2d Too great a quantity of food of an agreeable kind affords too much nourishment to the system, induces plethora, & the diseases consequent to that state. Of diseases brought on by too small a quantity of aliment. It is difficult to fix the quantity of aliment that ought to be taken into the system in a healthy state. The age, labor & a variety of other circumstances must be attended to. I have said that 8 lb was sufficient for a healthy man in 24 hours, but it is certain he may at times take more or less without injury.

Disease from the want of stimuli is a preternatural action, as well as disease from too much. The disorders from the want of a sufficient quantity of aliment, divide themselves into 3 classes childhood manhood & old age

Slaves often contract disease from the want of a sufficient quantity of food, combined with a laborious life; hence they often complain of pains in the bowels, pains of the head &c

Abstinence from food has made a part of every religion in the world, & hence by being carried to excess, the secretions into the stomach become acrid for the want of food & excite hunger. Hunger when in the extreme has impelled not only the brute species, but man to the most unnatural acts, such as eating their own children, & even a part of themselves.

A small degree of hunger produces strength from the stimulus of desire; hence man is more alert in body & mind, when neither extream takes place. The Lion ceases to rage, & becomes gentle after devouring his 25 lb of meat every day. This placidness in man & other animals arises from the pleasurable sensation of digestion, according to the ingenious Darwin.

Of the quality of aliments &c

These resolve themselves into two kinds animal & vegetable. —

Flesh & fish have made a part of the food of all nations; hence itch, color of the skin changed, lice, leprocy, hemorrhag, scurvy &c. There are instances of the scurvey being induced by fresh meat; but more of this hereafter. —

Vegetable diet has constituted a principle part of the diet in every country. Some nations live entirely on it. The nourishment of vegitables consists in the gluten & saccharine matter. The gluten of wheat appears to afford nourishment similar to animal food. Vegetable diet produces weakness, anorexia, dispepsia, heart-burn, flatulency, dropsey, dysentery &c. vegetable food is said to quicken the ~~pulse~~ powers of imagination, better than animal. It is said Sir Isaac Newton lived on vegetable diet while he was composing his piece on optics. Of the preparations of aliment

We have already taken notice of the quantity & quality of aliments, & their influence in producing diseases; we shall now observe a few things in respect to their preparation, use &c

1st Of Preparation. This relates to the methods used in different countries termed cookery. The first noxious property, is that of its being too rare: 2dly not being

sufficiently masticated, this is the fault of great eaters, & those who have been almost starved; this practice proves a fruitfull source of Dyspepsia, as the powers of the stomach & juices are not suffici=ent to reduce it to a state which is necessary to digis=tion. 3.ly It hurts the system by being taken at too long intervals. It is better to eat often & little. It distresses or restrains the digestive powers already weakened by too long abstinence. I have remarked that members of congress & others who attend from 8 to 3 o'clock, to be troubled with dyspepsia in a short time, I always advise them to put in their pockets to eat occasion=ally som gingerbread, the same ought to be observed by those who journey. 4.ly Aliment is either offen=sive or inoffensive according to the different modes of exercise. It is imprudent to exercise after a full meal when not accustomed to it; but labourers find no inconvenience from it. It has been sup=posed by Divines & Philosophers, that the time will come when vegetables will be the only diet, there are but few diseases among the brute creation, and perhaps this may be owing to their living on vegetables. The antidiluvians were healthy & long lived, we have no record of that they lived on animal food. 5.ly Sudden transitions from animal to

to vegetable, or vice versa, creates debility by the application of a new stimuli. This observation is of great importance in the small-pox & I never put a patient on a vegetable diet till a few days after Inoculation. It is in some persons apt to produce costiveness as not being sufficiently stimulating to the intestines. It is necessary here to observe that the most dangerous relapses in fever arise from a hearty meal, or making too free a use of spirits.

6.th An improper mixture of aliments proves a source of disorder to convalescents. 7.th Aliment produces by being too hot or cold. 9.th Novelty disorders the stomach & alimentary canal; hence we sometimes nauseate those things we have not been accustomed to, & the smell of meat to one who has not eaten it for some time is highly offensive 11.th Aliment proves offensive by lying in the first passages. Instances are on record of its lying in the stomach & intestines for days and even years undigested; hence the necessity for a physician to attend to the aliment his patient has taken has taken, for a considerable time back, as well as at the biginning of a disorder. 12.th Food is often the cause of disorders owing to the vessels in which

it was prepared, being of lead, copper, &c. Likewise from the uncleanliness of them 14. by from the animals previous to their use living on unwholesome food or such as is of a poisonous nature. Dysentary & diarrhea are frequently the effects of fresh meat. Salt meat prevents the cholera infantum in children, & many disorders in adults. It is stimulating to the stomach and spirits digestion; but too large a use of it produces disease, salt meat mixed with vegetables is not unhealthy & generally sits well on the stomach. Persons accustomed to salt meat, cannot do well without it.

I knew a man in the Pennsylv.a Hospital, who when he was asked by his Physician if he had every thing he wanted, began to weep, saying that the managers would not allow him a bit of salt meat, the meat was afterward procured for him & he recovered. This seems to show that we should indulge our patients moderately in what they wish. There is an idiosyncrasy which is a powerful source of disease in the human system which often hereditary, & shows itself by nausea & vomiting from the least hint of a disgustfull idea, story, sight,

sight, or smile. It is called by Dr. Whytte nervous sympathy. I choose to call it a sympathy of parts, call'd by Dr. Darwin association of ideas or motions.

Of Condiments in producing disease.

1st Salt. This substance is almost universally used. Brutes are fond of salt & when deprived of it will eat the saline earth as a substitute. The indians before they became acquainted with salt made use of ashes. 2d Vinegar is healthy when used moderately in assisting the digestion by moderating the alimentary fermentation, but when largely used it produces gastrodynia, nausea, gout of the stomach, flatulency &c. depending on direct debility. 3d Mustard produces gastrodynia by stimulating the stomach too highly, which after frequent repetition will be insensible to the weaker stimulus of food. Mustard induces indirect debility. a Physician ought some times to eat with his patients, I have more than once discovered high season'd dishes given to my patient either through design or ignorance. These spiced meats induce us to eat more than is necessary by stimulating the stomach into too great actions. Zimerman represents the King of Prussia as a most notorious glutton who had dish after

dish highly seasoned, & still exclaimed he had barely enough to keep soul & body together.

4th Sugar when taken ~~together~~ excess is hurtfull by producing dyspepsia, creating acidity in the bowels & of course diarrhea. Honey has the same effect when used too freely.

There are two articles of diet which possess a place between aliment & drink viz. tea & coffee. They induce from their frequent use dyspepsia, Hysteria, hypochondriasis, head aches &c. from inducing debility on the alimentary canal & at length on the system.

Of Drinks. Mankind as well as brutes require some thing to repair the hourly waste of the fluids, these comprise wine, water, beer, cyder, & ardent spirits.

1st Water in its unmixed state is drank by 9/10th of all mankind who are healthy, long lived & vigorous in all their faculties. Dr Hallar ascribes the retention of his eyesight entire above 68 years, to his use of simple water; but it is not without its disorders & these I attribute to its sensible qualities of hot & cold & its combination with saline, earthy & aerial matters. Chemistry would benefit mankind if its attention was turned to and the examination of water. The coldness of water

affects the teeth first. It is said that there are more teeth extracted in the warm season than in winter; probably this is from the effects of water, its temperature being so much lower than our bodies.

2: It affects the pulse by lowering its action as evinced in the Cold bath. 3.d It is sometimes so violent as to produce syncope & death by its coldness.

When a Physician is called to a patient he ought to examine the water & if not good advise a change. I once cured a diarrhea which baffled all my remedies, by advising a change in this article. It is customary for some people to drink large draughts of it as soon as they rise in the morning & just before going to bed, this is an evil habit & only becoming inebriates, It weakens the stomach. 4 Wine has been long used, it has ended the existance of thousands & evil it is to be feared thousands more before the evil is discovered, It ~~raises~~ increases the pulse and raises the spirits only to sink them lower eventually, & may justly be considered the source of many chronic diseases such as schirrus liver, dropsy, apoplexy &c. 5.th Beer contains a large quantity of saccharine matter, & when drank too freely produces gravel, stone, palsey, apoplexy, gout &c

6.th Cyder is unhealthy by containing too much

acid, which is supposed to be rectified by plunging a red hot coal into it. 7. Spirits (see Physiology) hard labor, fatigue, journeys, cold, heat, sickness at the stomach, guilt, debt, misfortune, company, talking & lastly in medicine, these are circumstances which induce the use of it, but gentlemen I am happy to say that the use of spirituous liquor is much diminished in the United States. And I hope the period will not far distant when it will be considered as so much poison. If then gentlemen your business as well as divines to bear testimony against it, I cannot dismiss this subject without remarking that ale those Physicians who were assiduous in promoting the use of spirits as a diffusible stimulus, became through the use of it disordered, & fell martyrs to it.

Of Dress. Dress produces by its quantity, quality & fashion. It affects children & females the most, principally by its lightness or want of sufficient quanty.

Of Poisons. Poisons are only relative terms, for there is no substance in nature, but what may be called a poison when used to excess; as they

will all produce disease by deranging a part or the whole of the system; hence they are called poisons as they are noxious to animal life, & not of themselves. ~~The poison of the viper [illegible] into the stomach without producing any inconvenience.~~

Opium is as much a poison as any of those which are so called, but when rightly administered it is a cordial ~~to the system~~, & a most useful medicine.

Poisons are of three kinds, animal, vegetable, and mineral. The 1st comprises snakes & insects; these induce disorder locally by inflaming the part, & generally by fever.

2.ly Vegetable poisons are numerous, such as henbane, belladonna, stramonium &c. these act upon the skin by eruptions of different kinds.

3.ly poison of the mineral kind are, arsenic, lead, tin, copper &c. My principal design is not so much to enumerate as to describe their effects on animal life. 1.st They act on different parts of the system, but chiefly on the parts most necessary to exist motion. 2.ly some act suddenly on the brain & thereby extinguish life. 3.ly some appear to act specifically on the different systems. 4.ly some destroy muscular motion as laudanum. 5.ly some act principally on the blood producing

desolation. 6.ly On the lymphatic system pro=ducing thirst from a diminished secretion of saliva. 7.ly a few act on the skin as the small=pox Measles &c. 8.ly some act on the stomach and bowels causing nausia, costiveness &c. 9.ly Some on all the systems, as appears from the contagion of the yellow fever. 10.ly Some on the Lungs as mephitic air &c. These all act specifically on the body pro=ducing a great variety in the symptoms of diseases. Dr. Brown has done much mischief, by supposing all stimulents act alike on the system. How do they produce death? I answer ~~by~~ 1.st By destroying that part which emits motion, either instantly or by slow and imperceptable degrees. 2.ly By excess of stimulus: thereby hindering the emission of motion.

Of Worms. These are only remote causes of disease and never an exciting one. It is true they have been consi=dered as producing disease; but, I never knew an idiopa=thic worm fever in my life. They have been found in the brain, frontal sinus, liver, ~~throat~~, bladder, but most commonly in the alimentary canal. How are they propagated, & what disorders do they occasion? I suppose that they are produced by the mothers milk & exist necessarily in the bowels

of children; perhaps to consume a redundancy of acid, & thus instead of producing disease, be the means of preventing it (observe I mean the white round worm) If they produce disease it is from an error loci or excess in number; or, perhaps from the want of them. I am happy to find my opinion on this subject is not a solitary one.

Dr. Saunders of London has had a war with the worms & has come off in some measure victorious, I have had my conflict long since in this city respecting worms being a disease of children. It was sometimes difficult to administer to them without giving some preparation for worms; but I am happy to think my conflict has not been in vain.

When we consider the many substances that are introduced into the system, we may admire that more deaths do not happen; there are instances of disorders from this source in every part of the body; metals of all kind have been taken into the system & pins have been known to work their way from the intestines through the integuments & afterward been cured; causing convulsions in their progress.

Of anomalous substances externally applied.

These are pomatums & paint. They injure the

System by preventing perspiration & bringing on rugæ in the face & the appearance of old age.

Of retained excretions. These are the bile, faces and urine retained in the first passages. They hurt by the stimulus of distention, thereby weakening the organs, they ought to be discharged once a day at least, for tho' there are instances of their being retained for a considerable time without harm, yet they will do so by repetition. Diseases arising from retained excretions are, head-ach, piles, inflamation of the intestines, ruptures, &c. The suppression of perspiration is a fruitfull source of disease by debilitating the System, producing catarrhs, fevers &c. Are there any diseases produced by a retention of semen? I answer no; where there is no desire there is no disease, but when a desire appears, there appears a disease; hence the ejection of semen in dreams.

Of motion & rest; sleep & watchfullness, in excess. Excess in all those things produce diseases of different kinds. Too much motion produces indirect debility from excess of action; too little, from deficiency. The stimulus of desire and aversion have often prevented the System from arriving at the sleeping point for a great length of time.

There is on record a case of a woman in parturition that did not sleep for 45 nights, & suffered no injury from it; but this rare. —

Of diseases induced by the improper exercise of the faculties of the mind, & the venereal appetite.

The improper exercise of the faculties prove the remote & often the exciting cause of disease, from increasing & diminishing of the system.

Disorders induced by the understanding & on money; are improper thinking, long continued midnight study &c weakening both body & mind. The morbid influence of the passions induce acute & chronic diseases according to the prevailing passion. The passions are called sedative or stimulant as they affect the system. Love acts differently as partaking of desire & or fear. Joy from the sudden acquisition of wealth often causes suicide & mania. Anger was placed in man for useful purposes, but from an error loci is prolific in diseases from highly stimulating the system. Grief produces syncope, hysteria, hypochondrias &c. This often relieves itself by an effusion of tears, there is a certain weeping point in the system as well as a sleepy & hungry point,

deep grief descends below this point; hence some people in deep distress sleep very sound, by reducing the system to the sleeping point.

Of Fear. There is so much harm in the world, that we are afraid of harm from everything around us, these were originally intended for order and happiness, but by an error loci, have become the agents of evil. Fear produces disorder or death by excess, long continuance or increasing the secretions in one part & diminishing them in another; hence pale urine, diarrhoea, syncope, asphyxia diminishing the secretion of saliva. Hypochondriasis increases peoples distress by recounting their fears. Venerial desires are increased by lacivious conversation. anger by recounting irritating subjects. Fear by contemplating objects of terror. I have heard of a man whose hair became gray in one night by excess of fear. The passions are more violent when combined with guilt: hence the sence of a crime joined to the dread of punishment, not only drives man from his native home; but from himself, when there is even no pursuer From this view of the subject we are able to exculpate the apostle from the imputation of committing murder or Annanias

& Saphira who were guilty of falshood; this case was the effect of a physical cause, & not as divines wile have it of a preternatural one. I will not admit that the prediction of Peter had any thing of a divine mission, but only the effect of human observation, as a physician, philosopher or politician, by referring back to what had happened from ~~from~~ such & such occurrences could foretell what would happen at some future period. Thus Peter by seeing what effect fear & guilt had on annanias could not but suppose that a like effect would be produced on his wife, to which was added the death of her husband. It is common with parents & masters of families to deter children from falshood by them to the story of annanias & Saphira; but I do not believe that mankind are punished for crimes in this life, in the manner above mentioned, but are reserved for future judgment.

This immediate punishment is upheld as just in the creator by divines; but they do not discriminate between the crimes committed against the Deity & those against Society. In the first case punishment belong to God, in the latter to man, if he has a right to punish at all. Upon the whole

I am of opinion that the effects produced on those persons were of a convulsive nature, induced by the power of stimulus on the mind, and not by influence of a good or malignant spirit. I do not know that the venerial appetite produces disease, when confined by the laws of religion & society. The indulgence of this appetite too early in life or in old age produces debility, dyspepsia, tabies &c. It is remarkable that this desire is not violent in men between 40 & 50 altho' their conversation is often obscene.

Religion — I observed formerly that this was an innate principle; I still think it is as natural for the mind of man to worship some being altho' he may err respecting the object & manner of worship, as it is for his appetite to require the stimulus of aliment when prepared to receive it. This principle is general extending to every clime & nation. There is no physician (who is truely such) but what must be a christian; and none but such ought to be permitted to administer relief to the distressed but those who feel for another's woe in tender sympathy.

Employments. Agriculture & the affording from the inclemencies of the weather, were the first pursuits of man; I shall generally observe under this head of the remote causes of disease, that the laboring & Mechanic part of mankind, induce disease from the nature of their occupation, & quality of their materials. —

Amusements. Amusements attended with fatigue induce indirect debility. The fatigue of dancing has often prevented sleep; while the harvest-man who sweats and toils enjoys a sweet repose. It would appear as the nature design'd us to feel the effects of folly, while prolific pursuits make no impression. —

Customs. The custom of taking a glass of bitters before dinner, is a pernicious practice, as it diminishes the appetite for food by raising it above the hungry point.

Unhealthy Ancestors. The diseases derived from them are either congenial or hereditary. The congenial diseases are, the Small pox, measles, Lues Venerea &c these appear shortly after birth. Hereditary diseases depend on the shape & temperament of the body: hence narrow & slender shouldered persons are liable to Phthesis Pulmonalis. I think pulmonary consumption is more frequently derived from

the father, & mania from the mother. The gout is transfered from the father by a mixture of the fluids from all parts of the body with the semen in the act of coition. — Color is confined to the rete mucosum, under the cuticle, & not produced by the solar rays in warm climates. The injudicious mode of trusting to nature has done much harm, and its inability to cure diseases is seen in dumb animals, for when left to nature they generally die, but where art is used they most commonly recover. I believe the yellow water in horses can be as easily cured as the Yellow fever in man, as I take it to be the same disease making allowance for the different habits. Trusting to nature hinders man from using the remedies nature has afforded him. — Bleeding in the spring of the year has been prescribed for removing the morbid effects of the humors; but it is hurtful in health by inducing plethora, & ought never to be used but in disease.

Sympathy & Antipathy. This is a thorny subject & would require much time & care to prepare the way for the triumph of truth; and it is much easier to explain

the sympathy of the mind than the body; convul
tions are often the effect of sympathy or antipa
=thy; stuttering also, but how shall we account
for the phenomena? Man is an imatative animal;
whatever he sees performd he wishes to do likewise,
and tries to conform his power of volition, or muscu
=lar motion to the object in question. There is a sym
=pathy in families of difficult solution; the death
of one of the family when abroad, or his removal
to a distant place, is announced by one of his near
connections, long before there is any official account
respecting it. There would appear to be such a connec
tion in the habits & nature of families, as that the
loss of a member, is like to the loss of a member of
the body. Antipathy is either congenial or acqui
=red. Peter Czar of moscovy was born with an
antipathy to water. Acquired antipathy
arises from an association of ideas. The associati
=on of motion & ideas is a subject of great impor
tance in the cure of diseases of the mind.
Dr. Darwin has extended it to a great length,
hence the necessity of a physician guarding
against the association of ideas being excited

I shall only mention two sets of association of motion, the first is the practice some have of making water before going to bed; the second of a woman, who was a great snuffer & who frequently applied her fing & thumb to her nose, when she had no snuff in them.

Epilepsy has been brought on and continued by association; and any thing that breaks the association cures the disease, at least for that time. The last remote cause is time. —

Predisposing causes of disease.

They are either natural, or artificial. The natural occur in ale ages, as 1st in infancy. Those are sore ears from determination of blood to the ear, or the pressure of the bones of the cranium. From a retention of the meconium producing trismus; the cutting of the navel string & congenital diseases. —

2d Childhood (see Lawrence's treatise. In childhood irritability predominates over sensibility: hence they endure cold & disease better than those advanced in years. — 3d Puberty. From 16 to 21 a remarkable change takes place in the system, not only in bulk, but in appetencies & dispositions. Within this period the venereal appetite makes its appearance.

We observed that in infancy, excitability predominated over sensibility; but this excitable state decreases as we advance; and in manhood an equilibrium is established, At this stage of life there is what Cullen & & Haller term an arterial plethora, predominating over the venous system; this arterial superiority predisposes to acute diseases from the great action & distention in the vessels: hence at this period young people are troubled with frequent bleeding at the nose & other hemorrhagies, especially in inflamatory diseases if bloodletting has not been sufficiently used. The growth of the beard & the change of the voice, point out this change in males; and the distention of the ovaria, swelling of the breasts, appearance of the catamenia, & hair on the labia externum, in females. —
In adolescency & manhood when the arterial yields to the venous plethora, the excitability & sensibility being at par, we would be led to suppose man was in the vigor of his life, & so he is, but not without predisposition to disease; for this plethora is frequently thrown on the lungs & produces pulmonary complaints; hemorrhagies from various parts of the body happen at this time. It is observed that the arteries from this time grow more dense than the veins & increase with life.

This would induce death if there was no other cause. It is said to be the cause of piles. & old age. This is ushered in by a variety of symptoms, such as partial loss of sight & hearing, also an increase of excitability: hence old age may be properly called a second childhood. Dr. Mead has done much mischief by supposing that as we advance in age we aught to diminish our aliment - But the reverse of this is true, for we ought to increas it by moderate proportions, to destroy the increasing excitability: or in other words to keep the equilibrium between excitement & excitability. Old people are subject to disease from the changes of the weather, and particularly to inflamatory diseases, as peripneumonia notha. I suppose that the arteries of old people possess stimulability, from the accumulation of excitability, which disposes them more frequently to disease than when in a more equal state. -

2 The predisposing causes of diseases, appear in different conditions of the system; as in different temperaments; Therane said by some to be the effect of education; but they have their foundation in embryo, & appear at birth. They are the sanguine nervous, bilious & phlegmatic. A preternatural ~~in the sanguine~~ excitement in the sanguine, predisposes to inflamatory diseases. - In the nervous to the

hysteria, hypochondrias &c. in the bilious, to he-
patitis, bilious cholic, vomiting, diarrhea, & congestions
in the viscera — in the phlegmatic, to chronic dis-
eases from deficiency of excitability; such as dropsy.
The sanguineous & bilious require depleting remedies,
the nervous & phlegmatic, stimulating ones.
Different conditions in the single & married state,
require predispose to disease. Single men are pre-
disposed to hypochondriasis from the anxiety of ob-
taining a desirable object & maintaining a family.
Single women are predisposed to ~~hypochondri-~~
~~asis~~ Hysteria, Chlorosis &c. from disappointed love. Single
men & women are said to die in greater proportions
than married persons, perhaps from the vicissitudes
of love. I know no disease peculiar to the married
state, except barrenness, if it may be so termed. 3d
Pregnancy - This predispose the system to many
diseases. Pregnant women suffer most from
contagious diseases, or such as are of a highly
inflamatory type. Abortion is often the
consequence of disease; the predisposition arises from
a distention or fullness of the vessels in pregnancy,
which acts as an additional stimulus on the
system: hence they require depleting re

=remedies & bear them better than women not in that State. - A late opinion of the cause of puerpe=rile fever is, bruising the omentum in partuition.
4 The cessation of the menses is attended with a pre=disposition to many diseases in the system, this change when sudden, induces colic, hæmoptysis, schirrous breasts, or cancers, all depending on venous plethora; the best remedies are, a light diet, the bowels kept gently open & venesection; by this plan I have safely conducted many thro' this intricate time of life, while others have fall=en victims through neglect, or want of a guide.
5 Deformity in size, or configuration of the whole, or part of the body, predisposes to disease. This article takes in deformity of every kind, which is too numerous to repeat here. All deformities, of whatever kind, may impede the functions of life, and render them unfit for motion. 6 Congenial weakness as predisposing to disease has been alrea=dy hinted at. In addition we shall only observe that 7 months children are weak, tho' this must be owing to their manner of living after birth. The present King of Great Britain was a 7 months Child. - The artificial pre

predisposition to disease is difficult to distinguish from the natural. All diseases are connected together by links; one predisposing to another, & this to a third &c. Artificial diseases belong to a state of society, but as we cannot view man in any other state, all the diseases to which he is liable may be termed natural.

The occasional causes of disease require little to be said on them. The predisposing often become the occasional or exciting causes; therefore all that is to be understood by occasional is the stiping in of stimulus, in the predisposition to disease, & exciting morbid action in the body.

The Proximate cause of diseases, are divided into general & practical. 1. The general causes affect the whole body either directly or indirectly; It is necessary to observe that this is the last link of the chain of causes, and that the proximate cause is the ipse Morbus; and is discovered in different parts of the system, by irregular action, morbid, unequal, or convulsive, whichever you please, or that state of action which differs from the healthy standard-

I have already observed that disease is a unit, and its proximate cause must be one likewise viz: irregular action in some one or all of the system. It is from the different action which disease exhibits that gave rise to the nosological arrangements, or divisions of diseases, into genus & species; whereas they ought to have obtained the name of disorders. I do not mean to detract from my predecessors any thing of fact, for the time wile come when facts as elucidations of ~~our~~ diseases wile enter our System of medicine. All I wish to say before leaving this subject, is, that the proximate cause of disease whether general or local consists in morbid action, either in the sanguineous, nervous (in which I include the mind, brain & nerves) alimentary, lymphatic & glandular Systems —

1: Of the causes that affect the system, through the arterial system. These are the alterations of heat & cold on the body, disposing it from this debilitating operation, to fever. There are other stimuli besides the two mentioned, and which ~~from this cause~~ we have formerly taken notice of under the predisposing & remote causes, which from their excess or deficiency, induce fever: but these

different stimuli either in name or force, act=ing on the arterial system produce but one disease & that is fever. The different degrees of power, or the deficiency of action which the arteries exhibit from the application of these stimuli, I have titled states of fever; & the irregular action of the blood vessels, I shall call the proximate cause of fever. — (As Dr. Rush has treated in his 4 vol. of the proximate cause of fever, I omit saying any thing on the subject.) —

Translation of disease to different parts of the same or different systems. I need not mention that this is effected by the association of parts, or motions - see sympathy. 1. In the arterial system, the rheumatism is translated to the lungs, tra=chea, the head, joints muscles & intestines; & from this translation has assumed different names, quite dissimilar to the first, & bearing no resemblance to the rheumatism. Hamorrhagies also suffer a transla=tion from the uterus to the lungs, nose, anus &c. There is no end to the rambles of the gout, from the great toe it is translated to all the different parts & systems of the body.

Diseases of the glands change their places; as in the dropsy, from the sanguiferous system to the cel=lular — In the scrophula, from the lymphatic, in=to the arterial, producing a variety of names as febri=cula &c. Diseases exist in one part & affect another more remote: thus debility of the foot produces teta=nus of the jaw. From a review of the remote and pre=disposing causes of diseases, I think no one will deny the propositions that we laid down at the commencement of the description of these causes, viz. that disease is produced by debility, and that the very essence of it was morbid, or irregular action, inbited & fixed by predisposing debility, which was followed by the increased excitability; and the action of stimuli on this accumulation, produced irregular action. It is no objection to this, to say that are disorders which exhibit no irregular action that is perceptable. There is in disease such a thing as suffocated excitement, which has been destroyed by excess of stimulus; this excess of stimulus produces defect of action, from an excess of force, destroying life in a few hours; as in apoplexy, &c. Here then rests the whole secret of medicine, viz a knowledge of the disease or state of action, with the knowledge of the medicines that act on the system, is theism in medicine,

and the physicians who consider every affection of the system as mere non entities in the science of life. It will be proper to observe that longevity is not inconsistent with disease; there are many old persons who have laboured under some chronic disorder from their infancy; perhaps the disorder laid a restraint on intemperance, and thereby eluded the remote causes.

We come now to take notice of the partial causes which affect the body. The first thing that attracts our notice is the color of the skin of different nations. From this diversity of colors some naturalists have been led to believe that there are as many species of human nature, as there are colors; but this is not the fact, for the color is the only difference in most of the nations, except a few peculiarities as to form. But I imagine that their color arose in the first place from the leprosy; & that they exhibit all or most of the signs of that disease, a big lip, flat nose & the offensive smell they emit from their bodies, indicate the presence of leprosy, together with nervous insensibility.

When their diet & manner of life is changed for the better, the color becomes much

lighter; the juice of unripe peaches, friction & blood-
-letting are said to change their skin of a lighter color.
The muriatic acid has a similar effect on
their hair & skin; it further appears that this
color can be translated from them to white people.
A beautiful white girl, from a misfortune in
cident to her sex, was abandoned by her parents
to the world; The shame which she incured from
her crime, and desertion of her relations, indu
-ced her to wed a free negro. She had several chil
dren by him and her fair complexion was so
changed, as to be scarcely distinguishable from a mu
latto. If the above is the true cause of their color we
ought instead of dividing from them, for the sake
of humanity, alleviate their sufferings as
much as lais in our power.

Of Death. In spite of all our science we cannot
put a stop to this universal destroyer of all ages
& sexes. I hitherto observed that life was the effect of
stimuli upon the susceptibility of the animal
machine. Death therefore is only a want of
motion which takes place from several circumstances.

1. from the abstraction of stimuli — no more happens to a bell that is cracked or a bow unbent.
2 Death is often induced by excess of stimuli producing too great a tension in the organs that emit motion, something similar to the tension of the strings of a musical instrument. 3. Death, is induced by too great relaxation — The same happens to a violin, where the strings are relaxed. 4 By an error loci death often destroys ~~life~~ motion — The same happens to a musical peice when the strings are misplaced. — 5, Death happens from certain vitiated fluids ~~circulating~~ on encircling the parts that emit motion. The same happens to a bell or musical instrument in vacuo or under water. — 6 Death happens from wound or a solution of continuity — The same happens from cutting a musical string. 7 From rigidity or association of parts, the same happens to a peice of cat-gut when it becomes dry & inelastic.

Old age. Death then is no more than an incapacity to receive & emit those motions or stimuli necessary to life. Sometimes life goes out by pain, but not always, for often the transition to death is as an easy sleep.

This is very generally the case in ~~this age~~. It is not only the business of a physician to mitigate the evils & distress of ~~our~~ mankind, but also to render the passage out of life as easy as possible. it is a debt we owe to humanity & which I shall resume hereafter.

Of Therapeutics.

We have hitherto surveyed the animal body in its healthy state, we have also seen its diseased state we come now to consider the remedies for removing this state, called therapeutics; and also the method of exhibiting them, called modus medendi, or the cure of diseases. — I shall briefly detail the method of exhibiting medicines, so as to obtain their greatest possible effects, & then view the remedies themselves — and 1st of the supposed power of nature in curing disease. I have nothing to add, or any change to make to what I have published on the diseases of the Indians. I shall therefore pass this article by.

You may observe by this the frequent changes I have made in my principles of medicine. I think it no dishonor to lay down an old error & take up a new truth, for it belongs to the supreme

Being alone to be unchangable. when you are called to a patient let me advise you not to study what nature will do; but treat her as you would a noisy dog, or cat — push her out of the room, kick her down stairs & shut the door after her and rescue the patient from her hands. —

Medicines which remove morbid action, by abstracting stimulus from the diseased part, either directly or indirectly. There is such a thing in disease as violent, or excessive action; as well as weak and irregular. The cure of it is affected by a certain class of medicines called sedatives, from their removing the excitement, when excessive & irregular — I have said that some act directly on the excitement, & some indirectly, or through the intervention of the different systems. Under the first class are reckoned bloodletting, cold, in whatsoever manner applied; to which perhaps may be added rest. — Those which act indirectly are, vomits, purges, sweating medicines, salivations, blister, abstinence, darkness, moderate fear, diluting drink, ~~cleanliness~~ cleanliness; also certain salts as nitre & preparations of antimony, sugar of lead, foxglove & sweetail. In treating of the cure of inflamatory fever I shall mention the operation of this class of medicines.

3. Medicines which remove morbid action, by exciting a stronger & more healthy action in disordered or any other part of the System. This article comprehends all those medicines called stimulants - These for conspicuity are divided into external & internal. The internal are all fermented liquors, as vol: alkalies, bark, bitters of all kinds, empyreumatic & aromatic oils, opium, æther, pure air, the invigorating passions & sufficient excercise of the understanding; to these may be added vegetable & animal aliments in common use, with sago, salap, tapioca &c. The external are, several of the internal stimulants applied to different parts of the body, as the nose, temples, &c. Cold & warm baths, blisters, cataplasms of onion, garlic, mustard, &c. caustics boiling water, &c. It has been contended among physiologists whether this susceptibility, of impression, or excitability, is a quality of existance, without residing in, or partaking of matter. I shall not here resume the subject, as I have treated of it in my lectures on physiology; but say that excitability is matter, & may be converted into excitement, from the impression of stimuli, & vice versa, as vapor into water. - I shall now repeat some laws of action

1. There can be but one action in a system, at the same time. Take notice, I say one system, for the small pox & measles cannot act both on the sanguiferous system, at one & the same time: but as soon as one grows weak in action, the other like a tyrant thrusts it out & ~~takes~~ usurps its seat. This is of great importance in the exhibition of powerfull medicines, which act specifically on the same system, at the same time; But when one ceases, the other may begin, ~~and it can't~~ to act. There may be morbid action of the bloodvessels & the skin at the same time; as in the small pox & measles, but this takes place in different systems - viz: in the sanguiferous & glandular or lymphatic. Hunter & Brown denied this; but there is not any fact in medicine more evident than that there can be morbid action subsisting in the different systems at the same time. Thus in the yellow fever there is morbid action in the bloodvess and the glandular secretion of the bile; hence we have it in our power, in the applications of medicine, to apply specific medicines to the respective systems.

2d: There cannot exist at the same time two actions of unequal force in the same system, but the less always yield to the greater. This applies particularly to the translations of disease from one part to another. Thus a stone in the kidney sometimes induces such a violent action of the stomach, that the primary pain is not perceived till the other ceases. 3 All stimulating medicines act specifically on the different systems. It is proper to observe under this article, that in the application of stimuli, to excite a greater action than the morbid, in the cure of diseases of a highly inflamatory nature, it is unsafe, because they strain the powers of life already too much extended. That wine & bark have cured the yellow fever, I make no doubt. I think I cured 3 out of 13, before I adopted the depleting method; but since that the number I am happy to say is reversed; & I make no doubt that other inflamatory diseases are cured by this method, where the morbid action is weak, or the constitution holds out the unnatural conflict; we may observe further that often before we can obtain the salutary effects of stimulants, in many

cases we must reduce the morbid action below that of stimulants: Thus blood-letting reduces the morbid action, & prepares the way for the successfull use of tonic medicines; so that a moderate stimulus transcends in force the remaining weak morbid action, & thereby restores that which is equable & healthy; From this view of the subject it may be said that the cure is worse than the disease; & how can it be otherwise? suppose the morbid action to be 30, & the force of stimulus 20, it is certain that this stimulus cannot overcome a greater action. All then that can be done is to reduce the morbid action below that of the stimulus — I shall now mention the manner of exhibiting the medicine, but shall treat more largely of it when I come to the practice of Physic. The first method of ~~reducing~~ exhibiting medicines is, by reducing the system below the stimulant power of the medicines which are to be administered, by blood-letting, purging, &c. 2 In the increase of excitability, or first stage of acute disease, begin the exhibition of medicines in small doses; but in the increase of indirect

debility, large ones. — All depleting remedies in this state do harm — tonics therefore are recommended. In short, the greater the debility, the smaller the dose. 3 Do not combine too many medicines together, — they act better & more certain, the more simple you exhibit them. 4: Use stimulant medicines in rotation, as the constant use of one looses its effects on the system. 5: Intermit their application in chronic diseases. 6: Change their action from different parts of the body; as from the bowels to the skin by blisters, &c By this mode you will be able to affect the parts remote from the first action. Thus by chewing tobacco on one side of the mouth it becomes insensible to its action, but change it to the other side & it will often produce vomiting. 7: In the exhibition of your medicines always keep your eye steady on the ~~tem~~ force of the temperament. This is of great importance in medicine, as half the quantity will act as powerfully on one, which will not affect another. 8 Having established specific stimuli & specific systems on which they act, always observe to propor

-proportion then to the degree of excitability of each system. — I knew a lady who could hear soft & gentle sound as whispering, perforating a paper with a pin, &c. but could not hear the report of a cannon. It is difficult to account for this on philosophical principles, at first sight. It would seem as the medicines acting feebly, meet with fibres that vibrate feebly, while they pass by those of stronger ~~action~~ motion — thus parsley & other apparentlyest medicines cure the dropsy, &c. when the most powerfull drugs have been used in vain. Medicines remove morbid action in one part of the body, by exciting it in other parts less essential to life. I shall have pretenders to medicine of every description, joining with me in this article, as the means they assume in curing disease. Physicians often cure one disease by exciting another in its place: hence they often, in curing inflammatory fevers by stimulating remedies (without previous depletion) excite disease in some of the viscera, if they are not so fortunate as to destroy their patients in the course of the cure. We assume many efforts in

disease to mitigate pain; such as crying, groaning, &c. It has been thought a want of fortitude to complain under the impression of pain, but the reverse of this is true. Crying equalizes morbid action and diffuses it throughout the system, we mitigate the punishment of sin by weeping, wailing & gnashing of teeth. This doctrine will apply with equal propriety to the cure of morbid action in moral & politics as evil action are overcome by the stimulus of greater good. A few directions drawn from the preceding principles. Avoid translating a disease to a more vital part than that on which it is seated. Thus in purging you excite an artificial weak part in the bowels & so invite ~~a morbid~~ a morbid excitement from the blood-vessels, as in fever, to fix on the bowels. It is evident if you weaken the viscera too much, the morbid action falling upon them too violently may produce death. When morbid excitement is too languid, excite a stronger action in some other part, by ipispastics, &c. this may also be done by the stimulating passions.

Of the remedies for preventing the recurrence of disease by removing predisposing debility. Altho' debility be not disease, it is often worse.

I use stimulents of the less powerfull kind & in less doses, than in disorders where they are indicated - It is necessary to ~~then~~ repeat that debility is always followed by an increase of excitability - therefore the dose of medicine must be ~~[illegible]~~ lessened in proportion to the increase of debility. 2d: In the choise of medicines always choose those whose operation is the most certain & durable. Diet will therefore be found the most lasting in its effects. But this ~~be~~ must be taken sparingly and often, and in order to make it more effectual, should be used through the night. 3 Accomodate the diet to the state of the system. The reason why weak stomachs do not retain the aliment is, because the quantity or quality is not proportioned to the excitability, thereby producing too great excitement in the stomach. 4: Solid food, ought to be prefered to liquid because it is a greater stimulus to the System